

What is claimed is:

1. A micromirror actuator comprising:
a substrate;
posts formed to a predetermined height on the substrate and spaced a
5 predetermined distance apart;
a torsion bar fixed to the posts;
a mirror coupled to the torsion bar; and
a groove including an inclined contact surface and formed in the substrate,
the inclined contact surface contacting the lower bottom surface of the mirror when
10 the mirror is rotated.

2. The micromirror actuator of claim 1 further comprising:
a clamping electrode for generating electrostatic forces to clamp the mirror,
the clamping electrode formed on the inclined contact surface of the groove; and
15 a magnet for generating forces to drive the mirror taking advantage of an
external magnetic field, the magnet formed at one side of the mirror corresponding to
the inclined contact surface.

3. The micromirror actuator of claim 1, wherein the torsion bar is formed
on the same plane as the mirror and the mirror is formed to rotate about the torsion
20 bar.

4. The micromirror actuator of claim 2, wherein the torsion bar is formed
on the same plane as the mirror and the mirror is formed to rotate about the torsion
25 bar.

5. The micromirror actuator of claim 4, wherein a plurality of magnets are
arranged on an area of the mirror corresponding to the inclined contact surface.

6. The micromirror actuator of claim 1, wherein a plurality of magnets are
30 arranged on an area of the mirror corresponding to the inclined contact surface.

7. The micromirror actuator of claim 2, wherein the mirror is formed of a
conductive material, a driving electrode is formed at the inclined contact surface to

